Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A block data storage device, comprising: a host interface circuit which maintains a history of previously received read commands with associated non-sequential data sector ranges for a data storage medium, wherein the interface circuit switches from a nonlocal mode of operation in which non-requested data are not retrieved from the medium to a local mode of operation in which non-requested data are retrieved from the medium when a data sector address of a most recently received read command corresponds to at least one of said non-sequential data sector ranges.

~~a data recording medium on which user data are stored in a number of data sectors having data sector addresses;~~

~~a moveable data transducing head which accesses the data sectors; and~~

~~an interface circuit which processes read commands from a host device to retrieve requested user data from selected data sectors, the interface circuit dynamically switching from a nonlocal mode of operation to a local mode of operation in relation to proximity of a data sector address of a most recently received read command to data sector addresses associated with previously received read commands,~~

~~wherein during the local mode of operation, nonrequested user data from the recording medium are retrieved and placed into a buffer in anticipation of a future request~~

~~for the nonrequested user data, and wherein during the nonlocal mode of operation said nonrequested user data are not retrieved.~~

2. (currently amended) The block data storage device of claim 1, wherein the interface circuit further operates to switch from the local mode of operation to the nonlocal mode of operation after a plurality of consecutively received read commands are found to not correspond to said non-sequential data sector ranges ~~generates a read command history table comprising a range of data sector addresses associated with each of a plurality of n recently received read commands~~.

3. (currently amended) The block data storage device of claim ~~2~~ 1, wherein the interface circuit switches from the nonlocal mode to the local mode of operation when a data sector address associated with the most recently received read command falls within one of the ~~ranges of data sector addresses~~ data sector ranges of ~~the read command~~ said history ~~table~~.

4. (currently amended) The block data storage device of claim 1, wherein at least one of the previously received read commands in said history comprises a queued read command that has not yet been executed. ~~the interface circuit further dynamically switches from the local mode to the nonlocal mode of operation in relation to the proximity of the data sector address of the most recently received read command to the data sector addresses of previously received read commands.~~

5. (currently amended) The block data storage device of claim ~~4~~ 1, wherein the interface circuit further updates the history with the most recently received read command and removes the oldest previously received read command from said history when a data sector address of the most recently received read command is found to not correspond to at least one of said non-sequential data sector ranges. ~~generates a read command history table comprising a range of data sector addresses associated with each of a plurality of n recently received read commands, and wherein the interface circuit switches from the local mode to the nonlocal mode of operation when a plurality of m consecutive read commands are received in turn having associated data sector addresses which do not fall within at least a selected one of the ranges of data sector addresses of the read command history table.~~

6. (currently amended) The block data storage device of claim 1, wherein the interface circuit further updates the history with the most recently received read command when a data sector address of the most recently received read command is found to correspond to at least one of said non-sequential data sector ranges, wherein the most recently received read command is substituted within the history for the associated previously received read command with the corresponding non-sequential data sector range. ~~block data storage device comprises a disc drive and the recordable medium comprises a rigid magnetic recording disc.~~

7. (original) The block data storage device of claim 1, wherein the recordable medium comprises a recording disc on which a plurality of concentric tracks are defined, and wherein during the local mode the interface circuit employs a read look ahead (RLA)

technique so that, during a latency period between execution of consecutive first and second read commands, the interface circuit causes the data transducing head to remain on a first track having a data sector associated with the first read command so that the nonrequested data are retrieved from at least one other data sector on the first track.

8. (original) The block data storage device of claim 1, wherein the recordable medium comprises a recording disc on which a plurality of concentric tracks are defined, and wherein during the local mode the interface circuit employs a read on arrival (ROA) technique so that, during a latency period between execution of consecutive first and second read commands, the interface circuit causes the data transducing head to move to a second track having a data sector associated with the second read command so that the nonrequested data are retrieved from at least one other data sector on the second track.

9. (currently amended) A block data storage device ~~configured to retrieve user data to a host device in response to read commands issued by the host device~~, comprising:

~~a data buffer;~~

a ~~data recording~~ medium ~~on which the user data are stored~~ configured to store user data in a number of data sectors having associated data sector addresses; and

~~a data transducing head adjacent the data recording medium and which accesses the data sectors; and~~

means for ~~dynamically~~ switching from a nonlocal mode of operation to a local mode of operation in relation to a detected access pattern in non-sequential data read commands issued by ~~the~~ a host, wherein during the local mode of

operation nonrequested user data are retrieved from the recording medium and placed into ~~the~~ a buffer in anticipation of a future request for the nonrequested user data, and wherein during the nonlocal mode of operation said nonrequested user data are not retrieved from the recording medium and are not placed into the buffer.

10. (currently amended) The block data storage device of claim 9, wherein the means for ~~dynamically~~ switching operates to compare a selected data sector address of a most recently issued read command to data sector addresses associated with the non-sequential data read commands issued by the host ~~a plurality of recently issued read commands~~.

11. (currently amended) The block data storage device of claim 9, wherein the means for ~~dynamically~~ switching further operates to ~~dynamically~~ switch from the local mode of operation to the nonlocal mode of operation.

12. (currently amended) The block data storage device of claim 9, wherein the means for ~~dynamically~~ switching comprises an interface circuit comprising a programmable controller.

13. (currently amended) A method for transferring data between a host device and a block data storage device having a first memory space and a second memory space, the

second memory space storing user data in a plurality of data sectors each having an associated data sector address, the method comprising:

providing a most recent read command to request user data from a selected data sector having a selected data sector address on a storage medium;

comparing the selected data sector address to data sector addresses associated with a plurality of recent non-sequential read commands; and

switching from a nonlocal mode of operation to a local mode of operation when the selected data sector address overlaps at least one of the data sector addresses associated with the plurality of recent non-sequential read commands, wherein during the local mode of operation, nonrequested user data are retrieved from the storage medium ~~second memory space and placed into the first memory space~~ in anticipation of a future request for the nonrequested user data, and wherein during the nonlocal mode of operation said nonrequested user data are not retrieved ~~from the second memory space and are not placed into the first memory space~~.

14. (original) The method of claim 13, wherein the comparing step comprises generating a read command history table comprising a range of data sector addresses associated with each of a plurality of n recently received read commands.

15. (original) The method of claim 14, wherein the switching step comprises switching from the nonlocal mode to the local mode of operation when a data sector

address associated with the most recent read command falls within at least a selected one of the ranges of data sector addresses of the read command history table.

16.(original) The method of claim 13, wherein the switching step further comprises switching from the local mode to the nonlocal mode of operation in relation to the proximity of the data sector address of the most recently received read command to the data sector addresses of previously received read commands.

17. (original) The method of claim 16, wherein the comparing step comprises generating a read command history table comprising a range of data sector addresses associated with each of a plurality of n recently received read commands, and wherein the interface circuit switches from the local mode to the nonlocal mode of operation when a plurality of m consecutive read commands are received in turn having associated data sector addresses which do not fall within at least a selected one of the ranges of data sector addresses of the read command history table.

18. (original) The method of claim 13, wherein the block data storage device comprises a disc drive and the recordable medium comprises a rigid magnetic recording disc.